

Best Lighting and Controls Retrofits



HOSTED BY NORTHWESTERN ENERGY

October 22, 2019

Hampton Inn
2301 14th St SW
Great Falls, MT 59404

Registration Fee: \$139*

Value of \$700 per person

*Registration fee is **waived** for employees of companies that are NorthWestern Energy electric customers—limit of one employee per Large USB Choice Customer. Due to limited class size and trainings in Montana, reps from any single organization may be limited. NorthWestern Energy customers, use this code when registering: **NWE**

.7 Continuing Education Units through Washington State University will be available for this training

Class size is limited to 25 attendees

Key Learning Objectives

- Select best LED products for each application and assess impact of how they will impact future retrofits
- Determine where controls are cost effective saving energy and for non-energy benefits
- Identify diminishing returns and how to combat them, including using advanced financial tools
- Discover why Human Centric Lighting makes lighting much more than just a commodity
- Understand how this information applies to new construction

Who Should Attend

- Maintenance and operational staff
- Facility supervisors, engineers & contractors
- Managers, executives, owners & energy experts
- Consultants, energy efficiency experts & utility staff

Projects

- Office buildings, commercial stores, hospitals, prisons
- K-12 schools, colleges, trades schools, etc.
- Industrial plants, warehouses, cold storage, food processors, military facilities

Agenda

7:30 Registration (breakfast provided)

8:00 Morning Session

- Introductions
- Determine if controls are cost effective saving energy with LED
- Diminishing returns make retrofits challenging
- Non-energy benefits can overcome diminishing returns

9:45 Break

10:00 Morning Session Continued

- How current retrofits can affect future re-retrofits
- General LED information
 - Including tools to select optimal products

11:30 Lunch (provided)

12:00 Afternoon Session

- Interior applications

2:00 Break

2:15 Afternoon Session Continued

- Exterior applications
- Projects
- Final Q&A

4:15 Summary and Evaluation

4:30 Adjourn

Course Description

This course has been significantly updated since the spring of 2018 in Montana and Washington. Non-energy benefits can be necessary for retrofits, especially high performance fluorescent or existing LED, because energy savings and rebates are often no longer sufficient. Midwest Energy Efficiency Alliance stated that 75% of the benefits of energy efficient projects can be non-energy benefits from lighting and other measures. Non-energy benefits include biophilia, circadian and the new non-circadian parts of Human Centric Lighting, advanced controls, certifications, going green and reduced maintenance. Selecting the best value LED lighting is crucial since they may last a decade or more. Understand TLEDs that operate with existing ballasts, direct line voltage and dedicated drivers. Learn why LED lightbars, fixture kits and new fixtures can often be a better choice. Now not only LED hibays are cost effective to replace MH and HPS ones, but often also T8 and T5HO ones. Several interior and exterior applications will be discussed. Since LED wattages are so low, it is important to know when controls are cost effective saving energy. Register and learn much more regarding retrofits and new construction.

Instructor

Stan Walerczyk

Stan Walerczyk is principal of Lighting Wizards. His 30 years of lighting experience includes distribution, maintenance, retrofit contracting, third party review, consulting, design, luminaire design, rebate planning, policy making and research. He has written 100 white papers and magazine articles, including nine on high bays, and presented over 1,100 seminars on various aspects of lighting. He is a Certified Lighting Energy Professional by the Association of Energy Engineers and is on the Review Board. He is chair of the Human Centric Lighting Committee and wrote the book, *Lighting and Controls: Transitioning to the Future*, published by Association of Energy Engineers.

Hosting Sponsor

NorthWestern Energy

Co-Sponsors

- Bonneville Power Administration
- Flathead Electric
- Ravalli Electric
- Western Montana Generating & Transmission Co-op
- WSU Extension Energy Program

Registration Form on Page 3

How to Register

Deadline is October 8, 2019

Register Online:

www.regonline.com/211neea-industrialtraining

Or fill out the registration form on the next page and send it to:

NEEA Industrial Training c/o CLEAResult
100 SW Main St, #1500
Portland, OR 97204

Phone: 888-720-6823

Email: industrial-training@industrial.neea.org

Please make checks payable to NEEA Industrial Training c/o CLEAResult Consulting

Questions

Visit <http://neea.org/events> or contact the training center at 888.720.6823 or industrial-training@industrial.neea.org

This training is provided by Stan Walerczyk. For more information: stan@lightingwizards.com

The Northwest Regional Industrial Training project is coordinated and funded by the Northwest Energy Efficiency Alliance (NEEA), a private non-profit organization funded by Northwest utilities, the Energy Trust of Oregon, and Bonneville Power Administration. NEEA and its stakeholders subsidize up to 85% of the cost to attendees, which means the cost listed on the front of this brochure is significantly less than the average price in the marketplace. NEEA works in collaboration with its stakeholders and strategic market partners to accelerate the sustained market adoption of energy-efficient products, technologies, and practices. NEEA's market transformation efforts address energy efficiency in homes, businesses, and industry.

Register Online

www.regonline.com/211neea-industrialtraining

Registration by Mail

Please register me for the **Best Lighting and Controls Retrofits** training on **October 22, 2019** in **Great Falls**:

First Name		Last Name		Title		Phone	
Company Name		Electric Provider		Email Address			
Address						Please indicate special diet needs	
City						<input type="checkbox"/> Vegetarian	
State						<input type="checkbox"/> Other _____	
Zip							

Payment Options

Please mail this registration form with a check to the address on the prior page. If you have a discount code, purchase order number and/or would like an invoice, please indicate so below.

Discount Code: _____ Purchase Order: _____ Invoice Request: _____

Cancellation Policy: Full refund of registration fee if attendance is cancelled by deadline date; half refund thereafter.